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Knowledge and Attitude of Pregnant Women towards Management of Pregnancy-induced Hypertension in Southwest Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author RIF gave the concept and designed the study, data interpretation and literature searches. Author OAA managed the data interpretation, assisted in literature searches and wrote the first draft of the article. Author OBO helped in concept design, literature searches and assisted in data gathering and interpretation. All authors read and approved the final manuscript.

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ABSTRACT

The study explores the knowledge and attitude of pregnant women towards the management of pregnancy induced hypertension (PIH). It was a descriptive study, sampling technique was purposive and data was collected using a self-administered structure questionnaire. A sample of two hundred pregnant women was selected and data was analysed using descriptive and inferential statistics. Almost half of the participants were between the ages of 21 to 30 years (49.0%), with highest level of education as tertiary (58.0%) and 26.5% are currently pregnant for an average of 21 to 29 weeks. Knowledge and attitudes assessment indicated a high proportion of awareness (82.0%), hospital's education (65.5%), and the majority (58.0%) believed that anybody can have pregnancy induced hypertension and (75.5%) relate the possible causes to eating too much salt, stress (57.5%) and over weight (49.5%). Most of the participants prefer to visit

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hospitals/clinics whenever they have headache (63.5%), abdominal pain (72.5%), swollen face and leg (65.5%), reduced foetal movement (77.5%), high blood pressure (65.0%), nausea and vomiting (60.0%) and blurred vision (62.5%). The study recommended that consideration be given to richer advocacy beyond creating awareness on PIH but also advocacy for women and girl children to acquire formal education so as to better appreciate modern medical services in Nigeria. Higher formal education and the urban place of residence of the participants' accounts for increased application of knowledge on pregnancy induced hypertension; this makes them visit the clinics in the event of any observed issue in relation to their health as pregnant women.

Keywords: Pregnant induced hypertension; women; knowledge; attitude.

1. INTRODUCTION

Over 500,000 women die annually from complications arising from pregnancy, delivery and puerperium globally. About 55,000 women die in Nigeria and this account for 10.0% of the world total maternal mortality rate and the developing countries account for about 99% of the total deaths [1,2]. Maternal mortality is one of the indices used to evaluate a country's health care delivery and country's economic developmental stage [3].

Pregnancy induced hypertension is a condition specific to pregnancy, is a syndrome of hypertension with or without proteinuria, with the clinical manifestation usually occurring during the 20^{th} week of gestation or late in pregnancy and regressing after delivery. This includes gestational hypertension, pre-eclampsia and eclampsia. It occurs in about 5-8% of all pregnancy worldwide and more often in women with pre-existing kidney problem, diabetic women and those who had a previous pregnancy induced hypertension. It is said to be common in women younger than 20 years and older than 40 years, young women with a first pregnancy and women with twin pregnancies [4].

Hypertensive disorder in pregnancy contributes greatly to maternal morbidity and mortality. PIH (PIH) is a leading cause of maternal and perinatal mortality and can also lead to long term health problem like kidney failure, chronic hypertension, or nervous system disorders [5,6]. It is a major pregnancy complication that can cause premature delivery, fetal growth retardation, abruption placentae and fetal death, maternal mortality morbidity and disability.

Globally, PIH remains a dangerous medical condition and one of the direct causes of maternal morbidity and mortality. It is a condition that combines high blood pressure with excess protein in urine, swelling of mother's hand and face and damage to other organs of the body. The effect of maternal death on household income, household productivity and household disintegration has been widely described [7]. Recent evidence suggests high maternal mortality rate is as a result of inadequate knowledge, negative attitude and lack of preventive practice on the part of the pregnant women who have strong traditional beliefs [8]. Hence, the study seeks to investigate the level of awareness, knowledge and attitude of pregnant women towards hospital management of PIH.

2. THEORETICAL FRAMEWORK

The theoretical framework of this study is the Health Belief Model [9,10,11]. The Health Belief Model is beneficial in the assessment of health protection or disease prevention behavior. It addresses an individual's perception of the threat and seriousness posed by a health problem, perception of the usefulness of a behavior in decreasing the risk or threat of the disease and an individual's perception of the obstacles to adopting the new behaviour [9,10,11].

As applied to the study, the model was used to assess the level of awareness of PIH among pregnant women and their health seeking attitude to avert the symptoms health prevention behaviors. It is important for individuals to understand the importance and meaning of knowledge of PIH and its complication so that they can make a rational and appropriate care seeking behavior concerning PIH. The components of the Health belief model are perceived susceptibility, perceived seriousness, perceived benefits, perceived barriers, cues to action, modifying factors and likelihood of action. This study focused on perceived seriousness, perceived benefits, perceived barriers and likelihood to take action.

The perceived seriousness refer to perceived severity of a health condition linked to an individual's knowledge about the condition and its possible consequences. In this study

perceived seriousness was the seriousness with which the pregnant women would view the preceding signs and symptoms of PIH complications, like eclampsia, continuous frontal or occipital headache, epigastric/abdominal pain, confusion, nausea, vomiting reduced fetal movement, reduced urine output, and blurred vision. Implications of the severity range from an emotional response to concerns regarding possible restrictions affecting self, employment, family life and social relations. In this study restrictions were resting and withdrawing from daily activities, without any reprimand from significant others.

The perceived benefits or preventive action refers to how various beneficial alternatives are believed to be feasible, acceptable and or desirable. These are the person's beliefs about the availability and effectiveness of various sources of health care and not the objective facts about the effectiveness of action determine what course of action one will take. In addition the norms and pressures of social groups influence individual's behavior on seeking care. In this study the perceived benefits of using any of the sources of health care provision by the pregnant women were a desire to feel well, prevent fatal complications, convulsion, delivered before baby dies, be examined by a doctor or nurse given correct treatment, their pregnancy prolonged and to allow the baby to grow.

Cues to action (the likelihood that the person will take any action) is influenced by the perceived benefits of the action weighed against barriers to acting, examples of barriers are costs, inconvenience, unpleasantness or how much change it requires. In this study likelihood that the person will take any action is the likelihood that the pregnant women with pregnant induced complications will report for professional treatment. Barriers to acting in this study are costs of the treatment at the hospital, cultural beliefs values and attitudes towards the hospital, hospital staff and the quality of care.

3. METHODOLOGY

This is a descriptive study that was designed to ascertain the knowledge and attitude of women who attends antenatal clinics in two referral hospitals in Akure, Ondo State, Nigeria on management of PIH.

The target population for the study was pregnant women attending antenatal clinics of the hospitals. Purposive and convenience sampling techniques were used in the study. The participants for the study were a total of 200 pregnant women that attended the clinics. The participants were randomly selected from those that attended the clinic.

The sampling instrument was a close ended questionnaire that was presented using values such as yes and no option as well as choosing from listed options. The instrument was divided into 4 sections. The first section consists of the demographic data of the participant such as age, level of education, occupation, religion, marital status, parity and gestational age while the second section contained item that measured the level of knowledge of the women about PIH as well as the perceived causes of the condition. The third section was based on the attitude of the women towards the hospital management of PIH while the final section dealt on relationship of regular antenatal clinic attendance and prevention of PIH.

For validity and reliability, a pre-testing of the data collections tools was done using a pilot study. Pretesting was done two weeks prior to actual data collection to allow for final adjustment and modifications to the questionnaire. The pilot study was carried out using ten participants with similar characteristics with the study participants. This was to check whether the instrument was valid and reliable. To avoid instrumentation which introduces bias to the research participants who were used for the pilot study were not selected again for the main study. The purpose of the pilot study was to assess the reliability and validity of the instruments and feasibility of systematic sampling.

Data was collected between March and April 2015. Each participant was given a questionnaire to complete, which entails guidelines on how to answer the questionnaire. Each participant was made to complete the questionnaire in an environment devoid of influence. Data analysis was carried out by means of descriptive statistics and presented in form of tables and charts.

For ethical consideration, approvals for the study were obtained from the management of the two hospitals used for the study. Prior to data gathering, pregnant women who fit in to the inclusion criteria and were willing to participants for the study were made to sign an informed consent form. Before signing the informed consent form, their rights to decline was explained to them. Throughout the duration of

the study, confidentiality and anonymity of the participants were ensured.

4. RESULTS

4.1 Demographic Characteristics of Participants

As shown in Table 1, most (49.0%) of the participants were between the age of 21 and 30 years. The educational qualification distribution pattern of the participants indicated that the majority of them (58.0%) had a maximum of tertiary education. Most of the participants (61.5%) were self-employed, with a large proportion of (88.5%) being Christians. A larger proportion of the participants (40.5%) had one child as at the period of data collection while their gestational age was fairly distributed as shown in Table 1.

4.2 Participants' Knowledge of PIH

When the participants were asked if they have heard of hypertension in pregnancy before, only 18.0% of them indicated they have not heard of pregnancy-induced hypertension while a large proportion (82.0%) of the participants indicated that they have heard of hypertension in pregnancy. The most prevalent source of awareness of PIH to the pregnant women in the location is largely through the hospitals and Clinics (65.5%) as indicated in Fig. 1.

When asked about their opinion on who can have PIH, more than half (58.0%) of the participants belief was that any woman can have PIH while 19.0% of them belief that women with the first pregnancy are more susceptible (Fig. 2). The consumption of too much salt (75.5%), stress (57.5%) and over weight (49.5%) were noted by the participants as the leading causes of PIH (Fig. 3). On the participants' knowledge on the leading signs of PIH, the majority (76.0%) mentioned continuous frontal headache (Fig. 4). The participants indicated that PIH could lead to several complications such as convulsion (72.5%) as highlighted in Fig. 5.

Table 1. Demographic characteristics of participants (N= 200)

	No of participants	Percentage of participants
Age distribution		
11 – 20	12	6.0
21 – 30	98	49.0
31 – 40	83	41.5
41 and above	7	3.5
Education		
Primary	6	3.0
Secondary	78	39.0
Tertiary	116	58.0
Occupation		
Civil Servant	39	19.5
Self Employed	123	61.5
Unemployed	26	13.0
Students	12	6.0
Religion		
Christianity	177	88.5
Islam	23	11.5
Parity		
Primigravida	47	23.5
1 child	81	40.5
Multigravida	72	36.0
Gestational age		
16 - 20 weeks	52	26.0
21 - 29 week	53	26.5
30 - 34 weeks	43	21.5
35 - 40 weeks	52	26.0

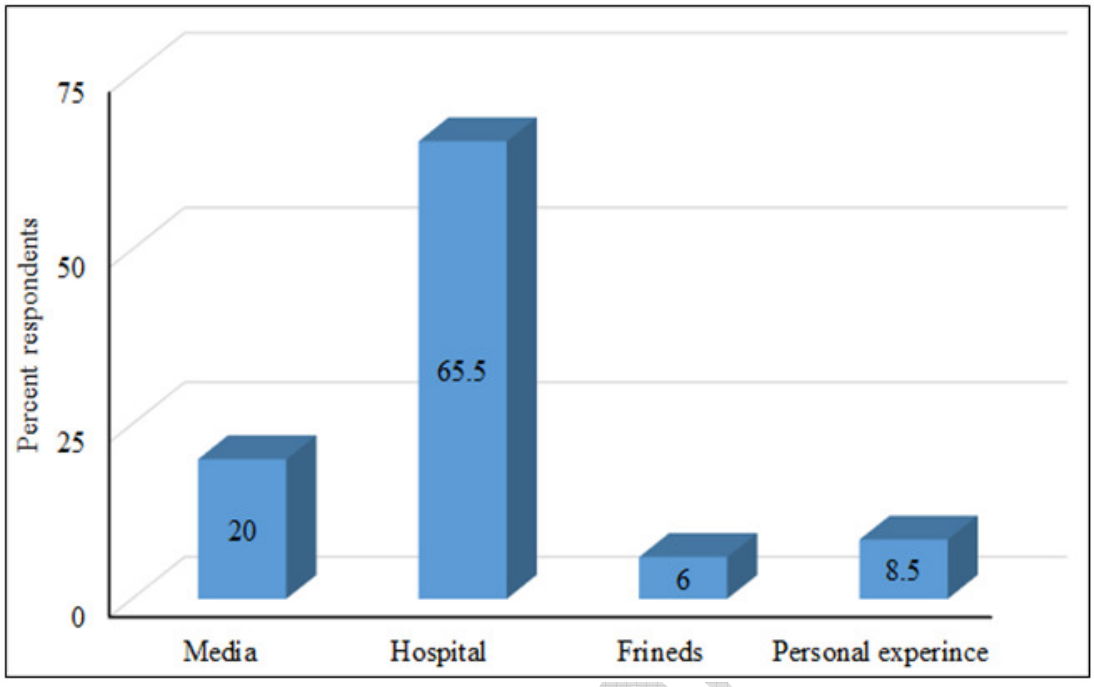

Fig. 1. Participants' sources of awareness about PIH

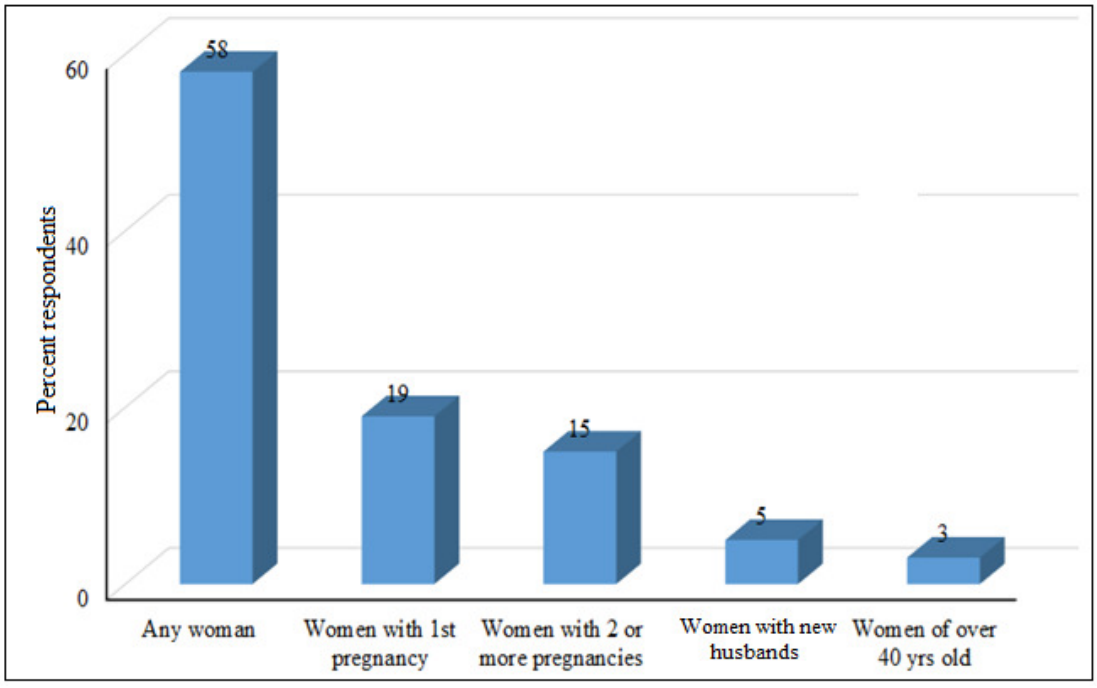

Fig. 2. Participants' opinions on who can have PIH

4.3 Participants' Attitude towards PIH

The majority of the participants (92.5%) believed that PIH is preventable. When asked on the course of action they will take if they experience any of the possible signs of PIH, there was high and consistent response that they will visit a hospital or clinic (Table 2).

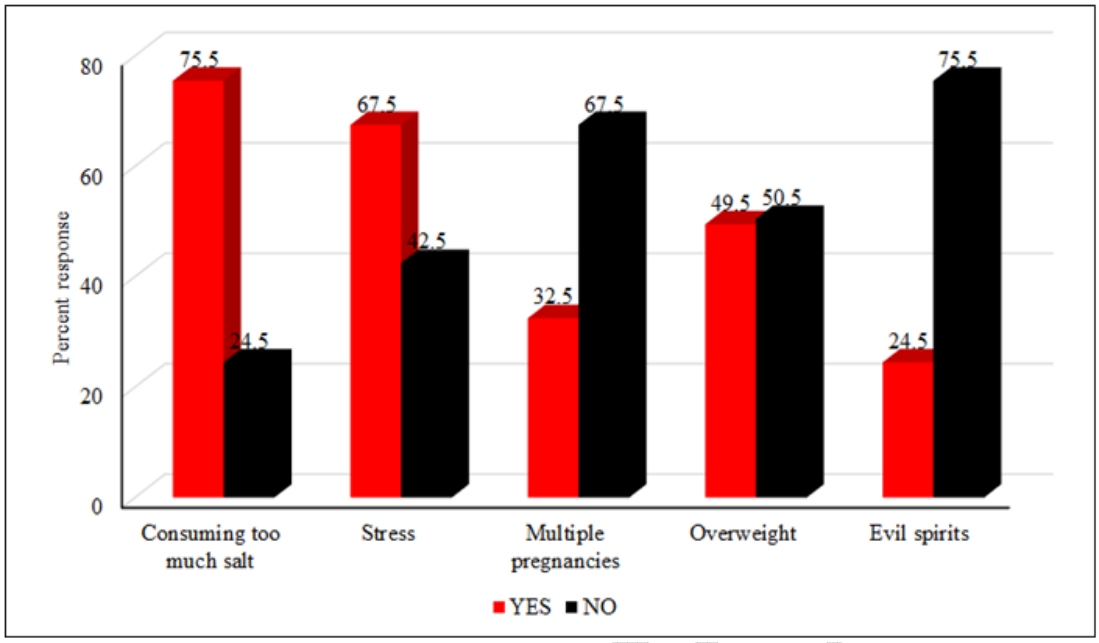

Fig. 3. Possible causes of PIH as indicated by the participants

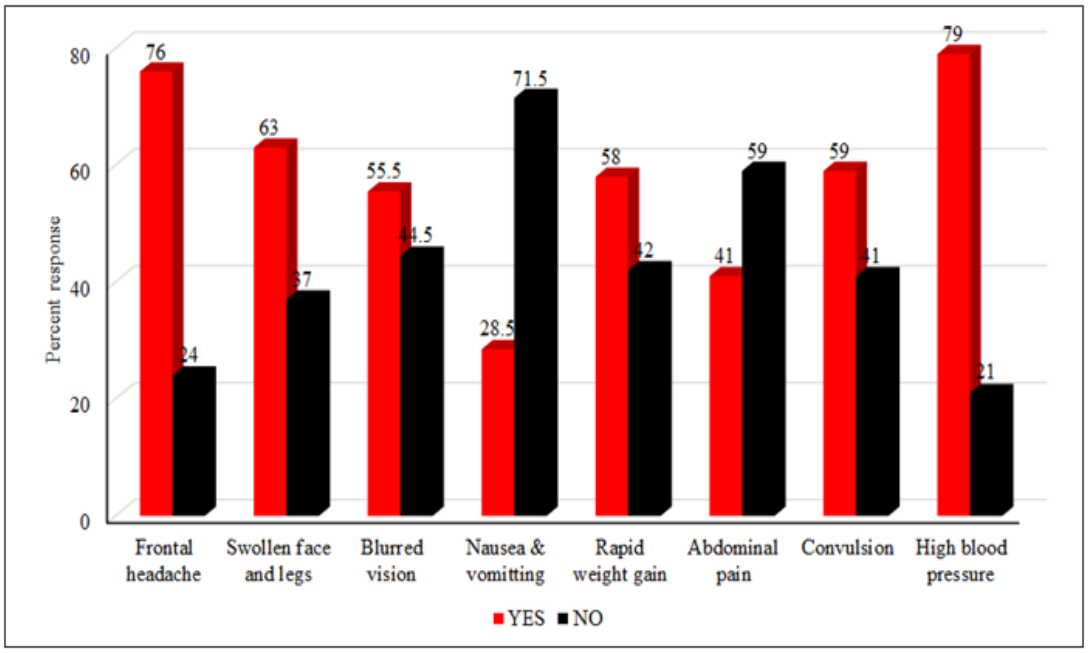

Fig. 4. Signs of PIH as indicated by the participants

When the participants were asked if they believe that traditional medicine can adequately manage PIH, a large proportion of them (80.0%) believed that traditional medicine cannot while 20.0% of them had the belief that traditional medicine can manage PIH. The majority of the participants strongly agreed that avoiding stress (56.0%), regular antennal care (53.5%) and avoiding too much salt or sugar (50) are effective preventive measures against PIH (Fig. 6).

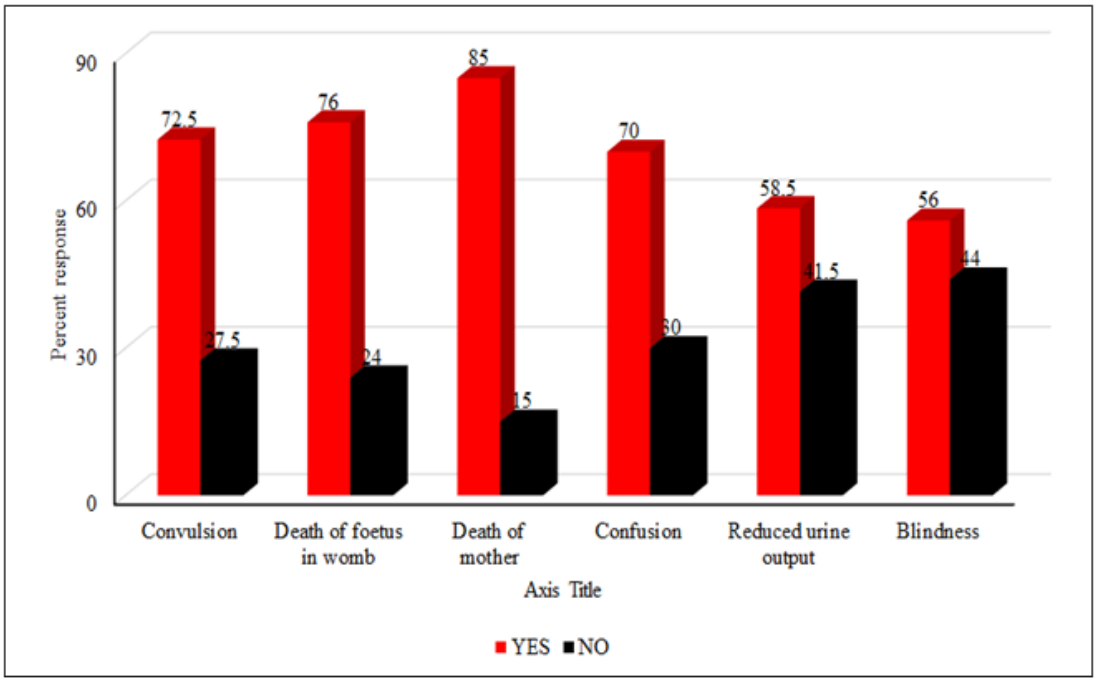

Fig. 5. Consequences of PIH as indicated by the participants

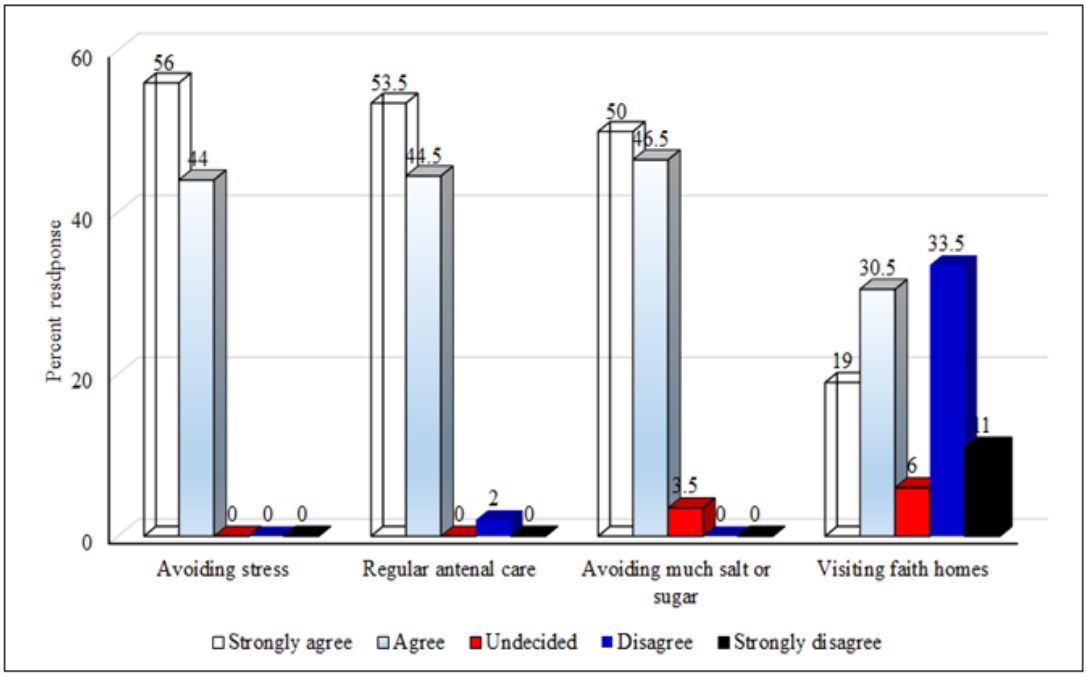

Fig. 6. Perception of the participants to preventive measures of PIH

On perception of the participants on the relationship of PIH prevention with regular antenatal care, the majority (98%) of the participants agreed that regular antenatal care aids early detection of the disease (Table 3).

Table 2. Participants' courses of action if they experience any of the possible signs of PIH (N= 200)

	Self-treatment	Visit traditional healer	Hospital / clinic	Visit faith healer	I can't have it	Rest or sleep
Head ache	54 (27.0)	19 (9.5)	127 (63.5)	0 (0.0)	0 (0.0)	0 (0.0)
Abdominal pain / Epigastria	14 (7.0)	8 (4.0)	145 (72.5)	33 (16.5)	0 (0.0)	0 (0.0)
Swollen face and leg	14 (7.0)	20 (10.0)	131 (65.5)	35 (17.5)	0 (0.0)	0 (0.0)
Reduced foetal movement	16 (8.0)	17 (8.5)	155 (77.5)	0 (0.0)	8 (4.0)	4 (2.0)
High blood pressure	25 (12.5)	14 (7.0)	130 (65.0)	0 (0.0)	0 (0.0)	31 (15.5)
Nausea and vomiting	27 (13.5)	49 (24.5)	120 (60.0)	0 (0.0)	4 (2.0)	0 (0.0)
Blurring vision	23 (11.5)	42 (21.0)	125 (62.5)	0 (0.0)	0 (0.0)	10 (5.0)

Values in brackets represent percent participants

Table 3. Perception of participants to relationship of prevention of PIH with regular antenatal care

	Yes	No
Aids early detection of the diseases and prompt management	196 (98.0)	4 (2.0)
Increase awareness of the diseases conditions and necessary control measures	193 (96.5)	7 (3.5)
Aids close relationship between mothers and the health workers	180 (90.0)	20 (10.0)
Continuous monitoring of mother and child	187 (93.5)	13 (6.5)

Values in brackets represent percent of the participants

5. DISCUSSION

Elevated blood pressure with systolic (>140 mmhg) and diastolic (>90 mmhg) on at least 2 occasions of 6 hours apart was noted as a major signal of PIH by International Statistical Classification of Diseases and Related Problems [12]. This trend of knowledge indicates a wide awareness and knowledge of certain specifics in relation to PIH; such awareness is needed to adjust factors that influence the individual's own self performance [13]. Self-care knowledge on PIH is needed in order to change behavior and practices which need to be changed, modified, abandoned, introduced, maintained or reinforced in order to control blood pressure [13]. The knowledge of PIH is the awareness needed by women to recognised the condition.

In the context of this study, knowledge is referred to the act of having adequate information and understanding of the concept of pregnancy induced hypertension. This can be obtained through health education, electronic media, prints and health education program. It is opined that knowledge of pregnant mothers is a major factor in determining the extent of utilization of antenatal services, hence educational status of pregnant mothers is an influencing determinant in the effective utilization of maternal and child health [14]. Findings from a study to determine the knowledge of PIH in Iranian pregnant women and effect of a simple educational interventional measure reported that the level of knowledge and attitude of pregnant women increased significantly after education [15].

According to a study on the knowledge of hypertension among the staff of university of Ibadan, Nigeria observed and reported that the level of education significantly influences the awareness of complication and knowledge of risk factors of hypertension, the higher the level of education, the higher the acquisition of

knowledge, attitude and behavior of the people towards hypertension [16]. While the lower the level of education, the lower increase in knowing the risk factors and prevention measures of hypertension.

Similarly, in a study on assessing awareness and knowledge of hypertension in an at risk population in the Karen ethnic rural community, Thasongyang, Thailand, reported that those with primary school education were likely to be aware of hypertension than those who did not have primary school education [17].

The consequences of PIH were identified to include convulsion 72.5%, death of fetus inside the uterus (76.0%), and death of mother (85.0%), confusion (70.0%) reduced urine (58.5%) and blindness (56.0%). This appreciable widespread of correct knowledge by the participants is contrary to the findings of Lawrence [18] that lack of PIH knowledge appears to be marked in the Sub-Saharan region as well. Clients with PIH in the Sub-Saharan Africa were particularly reported to take minimum appropriate actions to reduce the condition as they particularly blame evil spirit and witchcraft. This can be related to the tertiary education exposure that most of the participants claimed to have; as confirmed by a statistically significant association between knowledge and educational status of the participants found in a study carried out by Taha and Bella [19] on the knowledge of causes and prevention of chronic hypertension by education level (illiterate compared with literate), showed a highly statistically significant association between knowledge and education status of participants.

The attitudes of the participants towards PIH indicate that most of the participants preferred to go to the hospitals/clinics whenever they have various symptoms such as headaches and abdominal pains. Ojo [20] asserts that pregnant women with basic education usually manifest positive attitude. This positive attitude of going to the hospital first could be related to the participants' higher education attainment, and correct proper basic knowledge of PIH. Location as indicated by Igbokwe [21] is an environmental factor which could be associated with attitude of child bearing mothers towards health programs. He further argues that child bearing mothers in the urban areas tend to manifest positive attitude towards the utilization of mother and child health services more than their rural counterparts. Olusanya and Solanke [8] identified that inadequate knowledge and negative attitude and lack of preventive practice on the part of pregnant women who have strong traditional belief are major hindrances to efforts at reducing maternal mortality.

6. CONCLUSION

This study revealed an averagely appreciable awareness of pregnant women in the study area to PIH, a possible product of rich awareness effectively provided by the medical centers in the study location. Hospital and maternity tops the source of knowledge on PIH. There have also been a notable high level of formal education by the participants while the study was carried out in a urban settlement; these have been observed to be major determinants of the high level of patronage or visit by pregnant women to the hospital or clinics in the event of any issue in relation to their health. This indicates that medical facilities are better appreciated by pregnant women who live in urban centers and they also have received a good level of formal education.

The implication of this study for nurse administrators is the need to allocate more nursing personnel to antenatal care clinics so that pregnant women with PIH complications can be given proper health education. The evidence from the present study indicated that PIH self-care knowledge impacts on hypertension control necessitate the need to strengthen the continuing education sessions of practicing midwives.

It is therefore suggested that more should be done on comparative studies of attitudes of pregnant women in selected hospitals across both rural and urban communities to allow for broader assessment of their knowledge, attitudes and practices.

The study is limited to 200 pregnant women selected at random among numerous pregnant women that attend antenatal clinic at Mother and Child Hospital and State Specialist Hospital, Akure, Ondo State.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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